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Benno van Dalen

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1 This beautifully executed book with numerous colour photographs deals with two fascinating metal instruments that surfaced in 1989 and 1995 (a third copy was identified too late to be included in the study). Both consist of a world-map centered around Mecca with a rule that enables one to read off the *qibla* (sacred direction for Muslim prayer) of more than one hundred localities engraved on the map as well as their distance from Mecca. The metalwork is clearly Safavid and can be dated to approximately the year 1700. Only on one of the two instruments the European types of compass and sundial that were originally attached to both are still extant (as they are, in fact, on the third instrument).

2 The most important aspect of the instruments treated in the book is the origin of the mathematically highly complicated grid of the world-maps. Whereas the meridians (lines

of constant longitude difference from Mecca) are straight lines, the latitude curves can be mathematically shown to be ellipses and are approximated by circles on the instrument. The author shows convincingly that the design of the grid fitted very well in the Islamic mathematical tradition and was within the technical reach of such brilliant scholars as Ḥabaš al-Ḥāsib (19th century Baghdad and Samarra) and al-Bīrūnī (Ghazna, early 11th century). Furthermore, he shows that the coordinates of the localities on the two instruments were derived from a geographical table from a Timurid source somewhat later than Uluġ Beg and presumably compiled in Kish near Samarkand.

3 The book under review is of interest for a much wider audience than those interested in instruments or the Safavid period. The introductory chapters deal with numerous aspects of Islamic astronomy in general and instruments and geographical tables in particular. The various appendixes contain detailed studies of many of the sources used in the book. Extensive indexes make the goldmines of information in the nine chapters readily accessible. The very low price of only 50 euros makes the book one of the best buys in history of science of the last decade.

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Thèmes : 10. Histoire des Sciences et des Techniques

AUTEURS

BENNO VAN DALEN

J. W. Goethe-Universität - Frankfurt